IN THE CLAIMS

What is claimed is:

1. A surgical needle, comprising:

a linear body portion including:

a proximal end section;

a central section; and

a distal end section, the distal end section having a substantially parabolic configuration for producing a substantially uniform stress profile along a length thereof.

2. The surgical needle of claim 1, wherein the distal end section has a diameter determined according to the following equation:

$$d = (((32W)/(\pi\sigma))*(X_n))\text{^}(1/3)$$

where

d = measured diameter at location X_n;

W = load normal to the needle;

$\mathbf{X_n}$ = distance from a distal-most end of the needle; and

$\boldsymbol{\sigma}$ = chosen stress restraint.

3. The surgical needle of claim 2, wherein the distal end section includes a distal tip having a uniform taper.

4. The surgical needle of claim 3, wherein the distal tip has a length which is substantially equal to a diameter of the central section of the surgical needle.

5. The surgical needle of claim 1, wherein the proximal end section is configured and adapted to secure a suture thereto.

6. The surgical needle of claim 1, wherein the central section has at least one of a rectilinear, circular, oval, triangular, I-beam and ribbon shaped cross-sectional profile.

7. A uniform stress needle, comprising:

a proximal end section configured and adapted to secure a suture thereto;

a central section having a uniform transverse cross-sectional profile; and

a distal end section having a parabolic surface profile for producing a substantially uniform stress along a length thereof, the surface profile being defined by the following equation:

$$d = (((32W)/(\pi\sigma))*(X_n))\text{^}(1/3)$$

where

d = measured diameter at location X_n;

W = load normal to the needle;

$\mathbf{X_n}$ = distance from a distal-most end of the needle; and

σ = chosen stress restraint.

8. The uniform stress needle of claim 7, wherein the distal end section includes a distal tip having a uniform taper.

9. The uniform stress needle of claim 8, wherein the distal tip has a length which is substantially equal to a diameter of the central section of the needle.

10. A surgical needle, comprising:

a body portion including:

a proximal end section;

a central section; and

a distal end section, the distal end section having a substantially parabolic configuration for producing a substantially uniform stress profile along a length thereof, the distal end section including a distal tip having a uniform taper.